

## Spartna SPR-231

# Spartna SPR-231 Phase Rotation Indicator

## USER MANUAL

### 1. Introduction

The Spartna SPR-231 Phase Rotation Indicator is a robust, handheld instrument designed for accurately determining the phase rotation direction in three-phase electrical systems. It provides clear indications of clockwise or counter-clockwise rotation and identifies live phases through its graphical multiline LCD. Engineered for durability, the device features a double-molded casing and operates without the need for batteries, ensuring convenience and reliability in various industrial and scientific applications.

### 2. Safety Information

Please read and understand all safety instructions before operating the Spartna SPR-231. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Voltage Limits:** Do not exceed the maximum operating voltage of 850V AC.
- **Category Ratings:** This device is rated CAT III 1000V and CAT IV 600V. Ensure the measurement environment is within these safety categories.
- **Insulation:** Always inspect the test leads and alligator clips for any damage to the insulation before use. Do not use if damaged.
- **Live Circuits:** Exercise extreme caution when working on live electrical circuits. Always assume circuits are live until proven otherwise.
- **Personal Protective Equipment (PPE):** Always wear appropriate PPE, including safety glasses and insulated gloves, when performing electrical measurements.
- **Qualified Personnel:** This device should only be used by qualified and trained personnel.
- **Environmental Conditions:** Use the device within the specified operating temperature range of 0°C to 40°C. Avoid use in wet or explosive atmospheres.

### 3. Product Overview and Components

The SPR-231 Phase Rotation Indicator is designed for ease of use and durability. It comes with essential accessories for immediate operation.



**Figure 3.1:** Front view of the Spartna SPR-231 Phase Rotation Indicator, showing the LCD display and input terminals L1/A, L2/B, L3/C.



**Figure 3.2:** Back view of the Spartna SPR-231, illustrating the display legend for phase status and rotation, along with safety markings.



**Figure 3.3:** The SPR-231 indicator connected to its three color-coded test leads, each terminating in a wide-jaw alligator clip.



**Figure 3.4:** Close-up view of the robust, wide-jawed, color-coded alligator clips (red, yellow, blue) designed for secure connections.



**Figure 3.5:** All items included with the Spartna SPR-231: the indicator unit, three test leads with alligator clips, and a soft carrying case.

### Included Components:

- 1 x Spartna SPR-231 Phase Rotation Indicator
- 3 x Test Leads (color-coded: Red, Yellow, Blue)
- 3 x Alligator Clips (color-coded: Red, Yellow, Blue)
- 1 x Soft Carrying Case

## 4. Setup

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The SPR-231 is designed for quick and easy setup. No batteries are required for operation.

1. **Inspect Components:** Before each use, visually inspect the SPR-231 unit, test leads, and alligator clips for any signs of damage, cracks, or exposed wiring. Do not use if any damage is found.
2. **Connect Test Leads:** Connect the color-coded test leads to the corresponding input terminals on the SPR-231 unit (L1/A, L2/B, L3/C). Ensure a firm connection.
3. **Attach Alligator Clips:** Securely attach the color-coded alligator clips to the free ends of the test leads.

## 5. Operating Instructions

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Follow these steps to perform a phase rotation test:

1. **Ensure Safety:** Adhere to all safety precautions outlined in Section 2. Ensure the voltage and frequency of the system under test are within the SPR-231's specifications.
2. **Connect to System:** Carefully connect the alligator clips to the three phases of the system you wish to test. Connect the Red clip to Phase L1/A, the Yellow clip to Phase L2/B, and the Blue clip to Phase L3/C. Ensure secure and proper contact.
3. **Observe Display:** The SPR-231 will automatically power on when connected to a live three-phase system (within its nominal voltage range). The graphical multiline LCD will display the phase orientation and indicate the status of each phase.
4. **Interpret Results:**
  - **Phase Orientation:** The display will clearly show either 'R' for Correct (Clockwise) or 'L' for False (Counter-Clockwise) rotation.
  - **Live Phase Indication:** The display will also indicate if each of the three phases (L1, L2, L3) is live. If a phase is missing or below the minimum voltage, it will be indicated as 'MISSING'.
5. **Disconnect:** Once the measurement is complete, carefully disconnect the alligator clips from the phases, starting with the highest voltage phase if applicable, then the others.

## 6. Maintenance

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The Spartna SPR-231 is designed for low maintenance. Proper care will ensure its longevity and accuracy.

- **Cleaning:** Clean the device and leads with a soft, damp cloth. Do not use abrasive cleaners, solvents, or immerse the device in water.
- **Storage:** When not in use, store the SPR-231 and its accessories in the provided soft carrying case in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Inspection:** Regularly inspect the test leads and alligator clips for wear, cuts, or damage. Replace any damaged components immediately with genuine Spartna parts.

## 7. Troubleshooting

If you encounter issues with your SPR-231, refer to the following common problems and solutions:

- **No Display/No Indication:**
  - Ensure all three test leads are securely connected to the live phases of the system.
  - Verify that the voltage of the system is within the nominal voltage range (40V to 850V AC) and the frequency is between 15Hz and 400Hz.
  - Check for any breaks or damage in the test leads or alligator clips.
- **'MISSING' Phase Indication:**
  - Confirm that the corresponding alligator clip has a secure connection to the phase.
  - Verify that the phase itself is live and providing sufficient voltage.
  - Inspect the test lead and clip for damage.
- **Incorrect Rotation Indication:**
  - Double-check that the test leads are connected to the correct phases (L1, L2, L3) in the intended sequence.
  - Ensure stable voltage and frequency conditions during measurement.


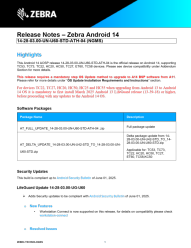
If the problem persists after attempting these troubleshooting steps, contact Spartna customer support or your local distributor for assistance.

## 8. Specifications

Parameter	Value
Model Number	SPR-231
Nominal Voltage	40V to 850V AC
Frequency Range	15 to 400Hz
Current Pickup	Minimum 1mA
Nominal Test Current (Per Phase)	1mA
Maximum Operating Voltage	850V AC
Operating Temperature	0°C to 40°C
Electrical Safety	IEC61010/EN61010, IEC61557-7/EN61557-7
Protection Level	CAT III 1000V, CAT IV 600V
Type of Protection	IP40
Power Source	Battery-free operation
Item Weight	135 g





	<p><a href="#">Sperry Instruments SPR-300 PLUS &amp; SPR-300 PLUS A AC Snap-Around Volt-Ohm-Ammeter Operating Instructions</a></p> <p>Comprehensive operating instructions and specifications for the Sperry Instruments SPR-300 PLUS and SPR-300 PLUS A AC Snap-Around Volt-Ohm-Ammeter, covering features, safety precautions, and measurement procedures.</p>
	<p><a href="#">Zebra Android 14 Release Notes: Key Updates and Installation Guide</a></p> <p>Detailed release notes for Zebra Android 14 (build 14-28-03.00-UN-U60-STD-ATH-04), covering software packages, security updates, new features, and resolved issues for various Zebra devices. Includes essential installation instructions and device compatibility information.</p>

Documents - Spartna – SPR-231



### PRODUCT DATA SHEET

#### SPR-231

Phase Rotation Indicator



Technical Specifications	
Nominal Voltage	40V to 690V AC
Frequency Range	50 to 60Hz
Current Range	1mA
Nominal Test Current (Per Phase)	1mA
Maximum Operating Voltage	690V AC
Maximum Safety	IEC60950/IEC60950-1
Protection Level	IEC60950-1/IEC60950-1
Type of Protection	IP40
Operating Temperature	0°C to 40°C
Dimensions	120mm x 75mm x 30mm
Weight	100g

#### Features

- Determine rotary field direction.
- Graphical multiline LCD indicates phase orientation (clockwise or counter-clockwise) and whether each of the three phases is live.
- Durable housing is double molded.
- Easy to open alligator clips with wide jaws.
- No battery required.
- Accessories: cables, three large color coded alligator clips and soft case.

#### General Specifications

Universal (SPR-231) Phase Rotation Indicator is a function instrument designed to detect the rotary field of three-phase systems.

#### Ordering Information

SPR-231: Phase Rotation Indicator

#### GET IN TOUCH

USA: [info@spartna.com](mailto:info@spartna.com)  
UK: [info@spartna.com](mailto:info@spartna.com)  
India: [info@spartna.com](mailto:info@spartna.com)  
Web: [www.spartna.com](http://www.spartna.com)

[\[pdf\]](#) Specifications Datasheet Dimension Guide Accessories

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PRODUCT DATA SHEET **SPR-231** Phase Rotation Indicator Features Determine rotary field direction. Graphical multiline LCD indicates phase orientation clockwise or counter-clockwise and whether each of the three phases is live. Durable housing is double molded. Easy to open alligator clips with wide...

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### 2025

## Products Catalog



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